

**EXTRA PRACTICE 18**  
**Multiplication of Polynomials**  
**Use after Section 4.5**

Name \_\_\_\_\_

Examples: Multiply.  $(4x^2)(2xy) = 8x^3y$

$$4x(3x - 5) = 12x^2 - 20x$$

$$\begin{aligned}(5x + 2)(x + 3) &= 5x(x + 3) + 2(x + 3) \\ &= 5x^2 + 15x + 2x + 6 \\ &= 5x^2 + 17x + 6\end{aligned}$$

$$\begin{aligned}(4x - 3)(x^2 + 2x - 1) &= 4x(x^2 + 2x - 1) - 3(x^2 + 2x - 1) \\ &= 4x^3 + 8x^2 - 4x - 3x^2 - 6x + 3 \\ &= 4x^3 + 5x^2 - 10x + 3\end{aligned}$$

Multiply.

1.  $(3x^2)(5x^3) =$  \_\_\_\_\_ 2.  $(4x^4)(-3x^2) =$  \_\_\_\_\_

3.  $(8y^3)(-4y^5) =$  \_\_\_\_\_ 4.  $(2z)(-3z)(4z^5) =$  \_\_\_\_\_

5.  $3x(4x - 7) =$  \_\_\_\_\_ 6.  $5x(-2x + 9) =$  \_\_\_\_\_

7.  $8x^3(4x^2 + 3x + 2) =$  \_\_\_\_\_ 8.  $-9x^2(3x^3 + 7x - 2) =$  \_\_\_\_\_

9.  $(x + 3)(x + 5) =$  \_\_\_\_\_ 10.  $(7x + 6)(2x + 3) =$  \_\_\_\_\_

**EXTRA PRACTICE 18 (continued)**  
**Multiplication of Polynomials**  
**Use after Section 4.5**

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11.  $(5x + 8)(2x + 1) =$  \_\_\_\_\_ 12.  $(x - 3)(x - 5) =$  \_\_\_\_\_

13.  $(3x - 7)(x - 1) =$  \_\_\_\_\_ 14.  $(6x - 2)(7x - 6) =$  \_\_\_\_\_

15.  $(x^2 - 1)(x + 3) =$  \_\_\_\_\_ 16.  $(2x + 4)(x^2 - 8) =$  \_\_\_\_\_

17.  $(x - 5)(x^2 + 3x - 4) =$  \_\_\_\_\_ 18.  $(x + 2)(x^2 - 7x - 2) =$  \_\_\_\_\_

19.  $(x + 4)(x^3 - 3x^2 + 4x - 5) =$  \_\_\_\_\_ 20.  $(x^2 + 3x + 7)(x^2 - 2x + 4) =$  \_\_\_\_\_

21. 
$$\begin{array}{r} x^2 - 6x + 4 \\ x^2 + 3x + 2 \end{array}$$

22. 
$$\begin{array}{r} x^2 - 8x + 5 \\ x^2 - 2x - 3 \end{array}$$